Article on Patentable Processes

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Processes.

This article is not intended as an exhaustive or comparative exposition of the theory of processes, which task, it is to be hoped, will later be taken up in an authoritative manner by some one of our seniors in the service. What has been aimed at here is to refresh our memories by means of a brief sketch, with a few homely examples, of some of the familiar basic principles of the process claimed from the standpoint of patentability.

What is a process? The answer is not easily found, although there are many definitions. Robinson states in Vol. I, sec. 159, that:

> "An art or process is an act or series of acts performed by some physical agent upon some physical object and producing in such object some change either of character or of condition."

In Cochrane *vs.* Deener, 11 O. G., 687, it is said that:

> "A process is a mode of treatment of certain materials to produce a given result; it is an act or series of acts performed upon the subject-matter to be transformed and reduced to a different state or thing."

As stated in Hopkins on Patents, Vol. I, page 45—

> "where a result or effect is produced by chemical action, by the application of some element or power of nature, or of one substance to another, such operations are called Processes. One may discover a new and useful improvement in the process of tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores, etc., irrespective of any particular form of machinery or mechanical device." This is a *process*.

To these definitions there are certain limiting principles, as laid down in the decisions, which form, in the majority of cases, uniformly logical and consistent precedents for our guidance. As to the seemingly contradictory decisions, we must remember that the doctrine

of *stare decisis* does not always find sympathy here; and furthermore, that our old rule of law that "decisions—not dicta—make precedents" is observed as much by its breach as otherwise. And fortunately so, since after all every patent case stands upon its own merits, and each one of our guiding decisions may be entirely misleading, if interpreted in any broad sense apart from the peculiar facts connected with that case. Hence, our judicial authorities, by decisions, and where necessary by *obiter dicta*, as our inventive world progresses, are constantly changing the illogical and unethical practices which are not consistent with our broadening ideas of patentability.

Therefore, in our consideration of an application for a process, where the decisions appear inconsistent, we must examine the case under the searching rays of the one great question: *Is this process new, and if not, has a new, useful and unobvious result been obtained*? Then, a logical application of a few guiding principles, in the endeavor to do justice, will generally determine whether the claim is, in form and subject-matter, patentable.

Processes have been classified as:

(*a*) Those involving chemical or other elemental action.

(*b*) Mechanical.

A chemical process is clearly and uniformly held patentable. See *Westinghouse vs. Boyden Co.*, *C. D.*, 1898, 443; *Ex parte Rogers and Winslow*, 87 *O. G.*, 699.

As to the mechanical process, the decisions hold that if the process consists of a mere function or principle of a *particular* mechanism, and it does not appear that it can be carried out by hand or by any other form of mechanism, it is not patentable. The machine alone, and not its method of operation, should be claimed. See *In re White*, 136 *O. G.*, 1771; *Expanded Metal Co. vs. Bradford*, 143 *O. G.*, 863. See, also, *Denning Wire and Fence Co. vs. American Steel and Wire Co.*, 169 *Fed. Rep.*, 793, in which it is stated that:

> "The phrase 'functions of a machine' is defined as that power or property of the machine of acting in the specific manner designed or intended by its construction; in other words, that which the

> machine is designed to do, as distinguished from the machine itself and from the product of its action on something external to itself."

There was a great doubt as to whether a process is patentable *if it could be practiced by several mechanical instrumentalities, so that it existed as an invention independently from any particular machinery.* This point was finally settled by Mr. Justice Day in Expanded Metal Co. *vs.* Bradford, 214 U. S., 366, in which he held that such a mechanical process is patentable, if a new and useful result is obtained, any expressions in Corning *vs.* Burden, 15 Howard, 252; Risdon Iron and Locomotive Works *vs.* Medart, 158 U. S., 68, to the contrary notwithstanding. See, also, *Cochrane vs. Deener*, 94 *U. S.*, 780.

The machinery to perform the process may be old, or it may be new and patentable. If the machinery is old, but is operated in a new way to produce a new and unexpected result, the process is patentable.

Of the rules, covering processes in general, we have:

(I) As stated in *Househill Co. vs. Neilson*, 1 *Webster Patent Cases*, 673, a *principle* can not be the *subject* of a valid patent, but as *applied* it may be the subject of a patentable invention. Robinson (Vol. I, sec. 135) states that:

> "A principle is some natural power or energy which operates with uniformity under given circumstances, and may thus be contemplated as obedient to law." . . .

A principle covers every mode, apparatus or process that accomplishes the result. See, for example, *Tilghman vs. Proctor*, 19 *O. G.*, 859.

In *O'Reilly vs. Morse*, 15 *Howard*, 112, the eighth claim of Morse on the telegraph was construed to be for the *use* of an electric current for marking signs at any distance, i. e., to be for the exclusive use of one of the powers of nature for a particular purpose and hence void.

See, also, *American Bell Telephone Co. vs. Dolbear*, 23 *O. G.*, 535, which states that the discoverer of a natural force or scientific fact can not have a patent for

that; but he may patent a process by which he makes use of a certain effect of one of the forces of nature. In other words, the principle that heat will decompose substances can not be patented, as involving merely the use of a natural force, but the process involving the decomposition of marble into lime and carbon dioxide by the application of sufficient heat thereto might be patentable. This involves the specific application of a principle.

(II) Along the same lines we find that a mere process carried out by nature alone is not patentable. But a patentable process may be had where a force of nature is put into operation under a certain specified condition and then used for a practical purpose, as shown by the decision in *Cameron Septic Tank Co. vs. Village of Saratoga Springs*, 159 *F.*, 453, which involved the process of purifying sewage consisting in—

> "subjecting the sewage under exclusion of air, of light and of agitation to the action of anaerobic bacteria until the whole mass of solid organic matter contained therein becomes liquefied, and then subjecting the liquid effluent to air and light."

This claim was not considered to cover a mere process of nature.

(III) Similarly, it is clear that a process must cover more than a mere operative theory. See, for example, Manhattan General Construction Company *vs.* Helios Upton Co., 135 Fed. Rep., 785.

(IV) It goes without saying that a process must possess some utility. See Rembert Roller Compress Co. *vs.* American Cotton Co., 129 Fed. Rep., 355.

(V) A claim should be either to a manufacture or a process, not merely to the *use* of a thing. See *Ex parte Mayall*, 1873, *C. D.*, 134; *Ex parte Averell*, 11 *Gourick*, 2, 9.

In the case of Morton vs. N. Y. Eye Infirmary, 2 *Fisher*, 320, it was held that "the *use* of ether as an anesthetic was invalid."

(VI) "Where a process is capable of being carried out by a variety of apparatus, the validity of the claim is

not affected by the want of novelty in the apparatus, if this process is new and produces a new result."

New Process Fermentation Co. *vs.* Maus, C. D., 1887, 402, 122 U. S., 413.

(VII) "A claim for a process, to whatever substance known or unknown it may be applied, is too broad." *Bailey Washing and Wringing Machine Co. vs. Lincoln*, 4 *Fisher*, 379.

Obviously, the claim must be limited to some art involving a particular material or group of analogous materials. For example, the process of heating *a substance* to 1,000 degrees centigrade to melt it, and then crystallizing it by cooling to 800 degrees could be applied neither to water nor to platinum. The process is necessarily limited in scope to a few particular materials, and should not be claimed in any broader application.

Of course, one may claim his invention as broadly as the limits of the art allow, provided the claim is not broader than the original disclosure, which disclosure, in turn, must be sufficiently clear that one skilled in the art may be able to utilize the same. (Rule 34.) For example, in *Eisenstein vs. Fibiger*, 160 *Fed. Rep.*, 686, a method involving coating canes with varnish and subjecting to a temperature of 240 to 300 degrees for not less than 3 hours was held void, because the limits of temperature stated were so wide apart that the process could not be carried out throughout the whole range claimed; hence, the claim was too broad in the sense of being inaccurate, vague and indefinite. This rule has been followed in *The Incandescent Lamp Patent Case*, 159 *U. S.*, 465, and *In re Dosselman et al.*, 167 *O. G.*, 983.

(VIII) "A patentable process claim must include all steps necessary to produce the stated or any useful result." In re Creveling, 117 O. G., 1167.

As stated in this decision, the claim "appears to be neither a broad statement of the essence of the invention, nor a statement of a segregable part thereof, in itself novel or capable of producing a useful result. It is, upon its face, a claim purporting to cover a method but *lacking one of the steps which is essential* to the carrying out of the alleged method."

This seems to be clear, following the precedents of the decisions covering claims to structure. Each claim must define an operative process, however broadly stated. For example, in making a battery plate involving the four steps of pasting lead oxide on a grid, treating it with sulphuric acid, drying it and then electrolyzing as a cathode in a suitable bath to form a spongy lead electrode—if these four steps are all essential steps in making the electrode, then the first two steps alone, for example, are not patentable, since a finished and useful product is not produced thereby.

Of course, one is entitled to subprocess claims where they can be properly drawn. As stated in *Ex parte Oxnard et al.*, *C. D.*, 1899, *page* 170:

> "An applicant may properly in one case have claims covering the principal or essential steps of his process, and other claims including these steps together with other specific steps which are not absolutely necessary to the performance of the process, but which add to its efficiency or make its operation more perfect."

In this case, claim 1 omitted the intermediate step, in a process of making sugar, of "agitating and reducing the temperature." Applicant contended that the omitted step was not essential to the performance of his process, although it was an improvement and rendered the process more practical. On this ground, the Examiner's requirement for division between claims 1 and 2 was overruled.

Similarly, in the example covering the making of a battery plate, referred to, if the step of drying the plate is not essential, but merely works toward greater efficiency and a better product, it may be left out of a broad claim. The claim without this additional step covers a complete, useful and operative invention by itself, and therefore is a true subprocess claim under the specific process.

(IX) This hypothetical claim suggests a difficulty, that of setting forth structure in a process claim. As a rule, a process claim should be expressed independently of the specific structure of the article treated and independently of the structure of the apparatus in which the

process is carried out. So far as the steps of the process are concerned, it is clear that it is immaterial whether the battery grid, or plate, is made of woven lead wire gauze or of a reticulated lead plate made up of V-shaped bars cast together; since these steps of pasting, treating with acid, drying and electrolyzing can be carried out with the one electrode structure as well as with the other. Similarly, if the claim specified "applying the lead oxide paste with a *trowel* and treating the electrode with acid in a *rubber lined wooden tank*," it would be objectionable. These structures have no patentable relation to the process steps. See *ex parte Crecelius*, 116 *O. G.*, 2531.

For example, it is held in *ex parte Ach*, 97 *O. G.*, 2411, that:

> "It is better form in a method claim to state that a mixture is heated at a moderate temperature than to state that the same is heated over a water bath." See, also, *In re Luten*, 143 *O. G.*, 1110.

This rule can not always be applied, however, in individual cases, especially in mechanical processes. Here the best we can say is that whatever structure is essential should be set forth to the minimum extent and only in the broadest possible terms, since no patentability is involved over the broad proposition in specifying particular structure.

(X) A troublesome question is that of *Analogous Arts*. The rule, simply stated, seems to be that a process claim in an application is anticipated by a patent for a similar process in an analogous art. See Ansonia Brass and Copper Co. *vs.* Supply Co., 58 O. G., 1694; Lovell Manufacturing Co. *vs.* Cary, 147 U. S., 623.

The rule is clear, but its application is difficult. The sweeping statement has been made that an old process applied to new material is not patentable. That this statement is too broad may be seen from the decision in *Tilghman vs. Morse*, 1 *O. G.*, 574, to the effect that "Driving cattle off a railroad track with a blast of sand does not anticipate sand blasting for cutting purposes."

The decisions along this line seem confusing until we

approach our basic question—does such an application of an old process in this new art involve inventive skill—by first asking what is the purpose or the result to be obtained in this new field? If a *new, useful and unobvious result* is obtained, a patent should be granted. To make this clear, we might consider a few guiding decisions. For example: There is no invention involved in the cleansing of chewing gum by the same process used for cleansing rubber. These are analogous materials. Adams *vs.* Loft, 4 Banning & Arden, 495.

On the other hand, in *Tannage Patent Co. vs. Zahn,* 70 *Fed. Rep.*, 1003, a process of manufacturing leather was held to be not at all analogous to a similar process for treating and dyeing fabrics.

In the former case (Adams *vs.* Loft) the only process was that of cleansing some thing, the nature of the thing being immaterial, since the results in the two operations were the same. In the latter case it was held that:

> While the process of tanning hides, abstractly considered, involving "saturating with acid, and then converting this into an oxide by chemical reduction" must always be the same chemical operation, it does not follow that there is no different process involved when this operation is applied to different materials to accomplish dissimilar results.

In accordance with these decisions, we find the following processes held unpatentable:

> No invention is involved in making artificial tooth crowns by the well-known process of striking up metals by means of a die, such as used in making thimbles, eyelets, etc. Rynear Co. *vs.* Evans, 83 Fed. Rep., 696.
>
> The method of casting stove covers is unpatentable over a similar method for casting wheels, shovels, etc. The process is merely that of casting, irrespective of what is formed thereby. Ex parte *Little*, C. D., 1869, page 25.
>
> Painting on canvas with a spray anticipates such on china. Fry *vs.* Rockwood Pottery Co., 101 Fed. Rep., 723.

A process for coating carbon paper anticipates the same applied to photographic bromide films. Eastman Co. *vs.* Getz, 84 Fed. Rep., 458.

A method of filling vessels with soda water anticipates the same applied to beer. Golden Gate Mnfg. Co. *vs.* Newark, 130 Fed. Rep., 112.

The difference between a process of blue tempering wire clock bells and the process of blue tempering furniture springs is at most a difference in the articles to which the process is applied, and is not a difference in process. Lovell Mnfg. Co. *vs.* Cary, 62 O. G., 1821. See, also, Howe *vs.* Abbott, 2 Story, 190; Brown *vs.* Piper, 91 U. S., 37; Penn. R. R. *vs.* Locomotive Truck Co., 110 U. S., 490.

On the other hand, we find a class of decisions holding certain processes patentable and supporting the theory of *Ansonia Brass & Copper Co. vs. Supply Co.*, 58 *O. G.*, 1694. It was held in this decision that:

"If an old process be put to a new use which is not analogous to the old one, and the *adaptation* of such process to the new use is of such character as to require the exercise of inventive skill to produce it, such new use will not be denied the merit of patentability."

Similarly, a process applied to a new object and producing a new and previously unknown result is patentable. See *Mowry vs. Whitney*, 14 *Wallace*, 620.

The process of regulating electric lights does not anticipate a similar one for controlling the speed of electric cars. Electric Car Co. *vs.* Nassau, 91 Fed. Rep., 142.

If the adaptation of an old process to a new use is of such character as to require the exercise of inventive skill, it may be patentable. Smith *vs.* Nichols, 21 Wallace, 112.

This case held, it might be noted, that merely making a more perfect article or a change only in form, proportion or degree or the substituting of equivalents does not involve invention.

From these two lines of decisions we are safe, I believe, in deducing that an old process is patentable where applied in a new art to produce a new, useful and unobvious result. But, where the processes differ merely in the nature of the material acted upon, and no new result is produced, patentability is not involved. Hence, if by any accidents of classification, patents covering non-analogous arts should be found together, that is no reason for rejecting an application in one art upon a patent in the other art, although they involve the same process steps, if there is a difference in result between the two cases. If a patent, for example, for a rotary dasher churn has become located in the class involving the absorption of impurities from a gas, an application for the latter claiming the process of washing a gas in the spray of a suitable solution, produced by a dasher arrangement, and covering a similar structure to the churn and *apparently* the same process, namely, that of agitating a liquid, should not be rejected on the patent, because of the entirely different functions and results obtained in the two processes, one, that of making butter from milk, the other, that of removing impurities from a gas.

For, in the initial analysis of a claim, one determines primarily the function or purpose of the process, what result is to be accomplished. Then, in the effort to judge the patentability of the claim the main question is *not*, are the steps of the process *met* by the patent reference, but, even if the steps disclosed in the application are apparently identical with those in the patent, *do the two processes accomplish the same results*, and would a knowledge of the process in the patent lead one, skilled in the art, to carry out the process of the application for the purpose stated, without exercising the inventive faculty?

(XI) Aggregation of Processes:

> "The addition of one well-known process to another well-known process does not constitute invention unless some different or better result is produced than that which had been previously obtained." Mond *vs.* Duell, Commr. of Patents, 91 O. G., 1437.

In *ex parte Harris*, 168 *O. G.*, 1033, claims for preparing, storing and dispensing a beverage were considered aggregational, since each of the steps was complete in itself and independent of the others. In the case of Mond *vs.* Duell, cited above, applicant claimed the lixiviating of roasted zinc ores by caustic soda, thus producing a zincate solution, combined with a specific process of electrolytically depositing zinc on an electrode from a zincate solution. So far as anything set forth in the claim was concerned the zincate solution made by treating the ores might well have been employed in many kinds of processes, and, again, the zincate solution of the second process could have been made by any suitable method other than the one specified.

The court hinted, however, that a claim properly drawn, tying together these different steps to produce a unitary and continuous process with a useful and novel result would be patentable. And it must be said that it is more often faulty construction of a claim than any defect in the inventive idea that results in claims being rejected as covering an aggregation of processes. Hence, a hint thrown out by the Examiner to this effect will often result in the granting of a good patent. In that case of Mond *vs.* Duell, applicant probably had invented a patentable process involving the manufacture of metallic zinc from the ore by the use of caustic soda and the regeneration of the soda with the formation of chlorine as a by-product, all neatly combined in a unitary process; *but the claim did not say so.* As shown by *Bate Refrigerating Co. vs. Gillett*, 9 *F. R.*, 387, to add old processes to obtain a better result is patentable. Similarly, omitting a step with new results may make a new process. See *Lawther vs. Hamilton*, 42 *O. G.*, 487.

(XII) "An accidental, unutilized anticipation of a process is not a reference." Tilghman *vs.* Proctor, 102 U. S., 707.

In *Carnegie Steel Co. vs. Cambria Iron Co.*, 99 *O. G.*, 1866, it was stated that:

> "Where patentee's process of mixing molten metal drawn from several blast furnaces includes retaining at all times a substantial quantity of molten metal in the mixer and this step is what

> adds value to the process and makes it a success. Held, not anticipated by mixing devices in which the metal might be retained when the users did not contemplate such use or understand its advantages."

In order that a process be anticipated by a prior patent for a mechanism, it is not only necessary that the prior patent might have been used to carry out the process, but that such use was either contemplated or *would have occurred in the ordinary mechanical operation of the device*. In the decision, *In re Moulton and Jones*, 191 *O. G.*, 588, it is held that:

> "A method of condensing steam is unpatentable over a prior patent showing a condenser, in which the several steps of the process are carried out, where applicant has discovered only the *underlying principle* of the device."

In such a case—

> "the first patentee is entitled to his mechanism for every use of which it is capable, even though he did not foresee all of them." See the decision in *New Process Fermentation Co. vs. Koch*, 29 *O. G.*, 535.
>
> (XIII) "If the process is no more than the necessary or obvious manner of effecting the product, the product alone is patentable." Ex parte Trevette, 97 O. G., 1173.

If the claims are accordingly in the wrong form the Examiner may suggest to applicant that the claim, although expressed as a process is nothing more in fact than an improperly worded claim for the product. Although any discussion of the questions of election and joinder of invention will not be attempted here, it may be noted that if the claim was not in the wrong form and applicant had elected to prosecute the process claim, then he has bound himself by the election and can not shift over to the article or apparatus. In support of this statement, see *Ex parte Aberli*, 91 *O. G.*, 2371.

SPECIFICATION.

(XIV) Finally, it should be stated that applicant need not disclose *every* mode or all the types of apparatus that he may employ, but he should set forth clearly and completely some one particular mode or apparatus by which the process can be carried out. See *Tilghman vs. Proctor*, 12 *Otto*, 707.

> "If a process has been described without the disclosure of any known means to accomplish the result, and inventive skill would be required to determine such means, then no patentable process is involved." Downton *vs.* Yeager Milling Co., 17 O. G., 906.

CONCLUSION.

In concluding this article, it is considered sufficient merely to repeat the one important principle, which underlies basically the whole theory of the process claim:

A process claim is patentable if it covers a new process, whether the result is new or old; but, if the process steps are old, the claim is not patentable, unless a new and useful result, unobvious to those skilled in the art, is obtained.

With this in mind, a logical and conscientious application of the few theories, as outlined here, will surely not work any injustice, either to the inventive world or to the general public.